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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,142	03/17/2005	Daniele Bazin	15009NP	2885

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EXAMINER

KERSHTEYN, IGOR

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/528,142

Applicant(s)

BAZIN ET AL.

Examiner

Igor Kershteyn

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/17/2005</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if

the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The disclosure is objected to because of the following informalities: the specification does not contain any section headings.

Appropriate correction is required.

Claim Objections

Claims 1 and 3 are objected to because of the following informalities: Claim 1, in line 5, claim 3, in line 4, recite "is included between", which should be changed to --is between-- because the language "included" brings an uncertainty to claimed ranges such as it is not entirely clear whether the claimed value is within the ranges or it is **including** the above claimed ranges. The Examiner interprets the claim language as *is between*. If Applicant meant to claim the range *is including between*, the claims will be given an indefiniteness rejection. Appropriate correction is required.

Claim 7 recites the limitation "said skin" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "said volume" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "preferably" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 2 recites the broad recitation "greater than 0.13", and the claim also recites "preferably than 0.15" which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, and 9, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan (1,509,653) in view of Ferleger et al. (5,352,092).

Kaplan, in figures 5 and 6, teaches Francis runner which comprises a crown (not numbered), a band (not numbered) and blades (not numbered) extending between said crown and said band, said blades defining liquid flow channels therebetween, characterized in that, at the level of the leading edge of each blade, said average fibre is oriented, over essentially the entire height of the leading edge, along a straight line forming an angle greater than 90.degree. in relation to the linear speed of advance of said leading edge in the direction of rotation of the runner.

Kaplan doesn't teach the ratio of the maximum thickness of each blade to the average developed length of its average fibre is included between 0.1 and 0.2.

Ferleger et al. in figures 2 and 6, and Tables I and IA, teaches a turbine blade 11 extending between a supporting structure 37 and a band 13, the ratio of the maximum thickness of each blade to the average developed length of its average fibre is included between 0.1 and 0.2, and the average angle between the linear speed of advance of a blade 11 at the level of its leading edge 22 and the average fibre of said blade 11 at the level of said leading edge is included between 110.degree. and 140.degree.

Since Francis and Ferleger et al. are analogous art because they are from the same field of endeavor, that is the centrifugal machine blade art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the dimension of blade of Ferleger et al. with the blade of Kaplan for the purpose of providing the blade that achieve adequate performance using very light weight airfoils.

Claims 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan (1,509,653) as modified Ferleger et al. (5,352,092), further in view of Tanooka et al. (3,797,965).

Kaplan as modified by Ferleger et al. teach all the claimed subject matter except that they don't teach the each blade is formed by a skin constituting the two lateral faces of said blade and defining a hollow internal volume of said blade, said skin is metallic.

Tanooka et al., in figures 1-5, teaches a Francis runner, having a plurality of blades 9, each blade 9 is formed by a skin constituting the two lateral faces of said blade and defining a hollow internal volume A of said blade, said skin is metallic.

Since Kaplan as modified by Ferleger et al. and Tanooka et al. are analogous art because they are from the same field of endeavor, that is the turbine blade art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the blade of Kaplan as modified by Ferleger et al. with the each blade is formed by a skin constituting the two lateral faces of said blade and defining a hollow internal volume of said blade, said skin is metallic. as taught by Tanooka et al. for the purpose of providing a welded type Francis runner comprising subassemblies which may be transported in a simple manner and assembled together on an installation site by welding without adversely thermally affecting the blades.

Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan (1,509,653) as modified Ferleger et al. (5,352,092) as modified by Tanooka et al. (3,797,965), further in view of Dunahoo (3,962,506).

Kaplan as modified by Ferleger et al. as modified by Tanooka et al. teach all the claimed subject matter except that they don't teach said skin is made of composite material, and said volume is lined with a filling material.

Dunahoo, in figure 19, teaches a blade having a skin 51,61 made of composite material, having an internal volume is lined with a filling material 15.

Since Kaplan as modified by Ferleger et al. as modified by Tanooka et al. and Dunahoo are analogous art because they are from the same field of endeavor, that is the fluid reaction airfoil art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the airfoil of Kaplan as modified by Ferleger et al. as modified by Tanooka et al. with the composition as taught by Dunahoo for the purpose of further reducing weight of the blade without sacrificing rigidity and corrosion resistance.

Prior Art

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consist of three patents.

Holmes (4,479,757) is cited to show a Francis runner having a cross section with an angle of a leading edge more than 90 degrees.

Patel et al. (5,480,285) is cited to show a turbine blade with a chord to camber ratio of between 0.1 and 0.2.

Beyer (6,155,783) is cited to show a hollow blade for a Francis runner.

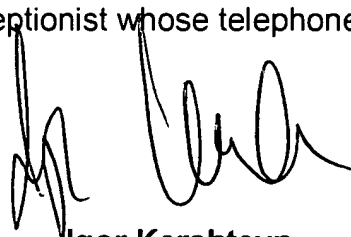
Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kershteyn whose telephone number is **(571)272-4817**. The examiner can be reached on Monday-Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on **(571)272-4820**. The fax number is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 0861.

IK
August 17, 2006



**Igor Kershteyn
Primary Patent examiner.
Art Unit 3745**

**IGOR KERSHTEYN
PRIMARY EXAMINER**